Technical Assistance Services *for* Communities

Report on Proposed Approach for OU3 Risk Evaluations

Contract No.: EP-W-13-015
Task Order No.: 3 OSRTI – Multi Regions & HQ

Site Name: DePue/New Jersey Zinc/Mobil Chemical Corp. Superfund Site
Site Location: DePue, Illinois

Purpose

In April 2014, the DePue Community Advisory Group (CAG) requested a review of the DePue/New Jersey Zinc/Mobil Chemical Corp. Superfund site (the Site) 2014 Proposed Approach for the Screening Level Human Health Risk Evaluation (SLHHRE) and Screening Level Ecological Risk Assessment (SLERA) for Operable Unit 3 (OU3) by the U.S. Environmental Protection Agency's (EPA's) Technical Assistance Services for Communities (TASC) program. Independent technical and environmental consultants implement the TASC program. The report's contents do not necessarily reflect the policies, actions or positions of EPA. TASC has provided this report to residents of DePue including members of the DePue Superfund CAG.

Community Concerns Identified by the CAG

Community members requested a general review of the proposed approach and the identification of potential concerns with the approach.

Site Background

The Site is located along the north side of the Village of DePue and includes about half of the village's land area. The cleanup has been divided into five OUs for investigation and remediation:

- OU1: South Ditch Contaminated Sediments
- OU2: Phosphogypsum Stack
- OU3: Former Plant Site Area (FPSA)
- OU4: Off-site Soils
- OU5: DePue Lake Sediments and the Flood Plain

General Comments

1. It appears that the SLHHRE will calculate cumulative risk and noncancer hazard indices (HIs) at each sample point and then map the risks. However, it is not clear how the mapping

will be conducted. It would be helpful to provide additional information on how the risk mapping will be conducted in support of remedial decisions. For example:

a. How will the risk maps be drawn?
b. How will receptors be chosen for the basis of the risk maps?
c. Will risk maps be generated for different risk levels?
d. How will risk maps be generated for HIs, as target organs/systems may differ from one chemical to the next?

2. According to the SLERA approach on page five, item 1, additional sample collection is planned at the Bluff area because the spatial coverage of soil samples in this area is limited. It is unclear why the collection of additional soil samples is not mentioned in the SLHHRE approach, as the additional samples are necessary to complete the SLHHRE as stated on page five. We suggest that the section that describes the SLHHRE approach be revised to ensure all discussions relevant to the SLHHRE are addressed. Further, according to page five, the additional samples will be collected at a depth interval of 0 to 6 inches. It is unclear why other depth intervals are not being addressed for the industrial/commercial receptor or construction worker receptor for the Bluff Area or whether deeper depths are warranted to address burrowing receptors.

3. The description of the approach to the ecological risk assessment (ERA) is too general to gain a clear understanding of how the ERA will be conducted at each of the three exposure units. We suggest that the key steps of how the SLERA will be conducted are provided, much like how the SLHHRE has been presented. For example, what guidance will be used is not specified. Please clarify if the SLERA approach is based on EPA's 1997 ERA guidance[1] and applicable supplements/updates, which identify Step 1(Screening level Problem Formulation and Ecological Effects Characterization), Step 2 (Screening level Exposure Estimate and Risk Calculation), and Steps 3 through 8 as the Baseline ERA (BERA) where refinements are made to SLERA assumptions.

   It does not appear that EPA guidance is being followed, as a SLERA is based solely on maximum concentrations in order to identify ecological COPCs; the use of averages or 95th upper confidence limits (95UCLs) is applicable to the BERA. If averages and 95UCLs are to be used, then all three areas will require a BERA, not just the Bluff area. We suggest that additional detail be included on the ERA approach to ensure it is appropriate in support of developing risk management decisions for the different exposure units.

Specific Comments

1. **Third paragraph of page 1:**

   a. The first sentence states that "*it is expected that the PRGs generated during the SLHHRE can be utilized as the "bright-line criteria" (BLCs), with no or minor adjustments, as*

[1] U.S.EPA. 1997. *Ecological Risk Assessment Guidance for Superfund, Process for Designing and Conducting Ecological Risk Assessments*, Interim Final. EPA 540-R-97-006, OSWER Directive # 9285.7-25.

part of the remedial objectives (ROs) development." We suggest that clarification would be helpful for this statement:

i. What minor adjustments would be warranted?
ii. The expectation is to use PRGs as BLCs. However, are there conditions where this may not be the case, and if so, what would the conditions be where the expectation would be different than what is proposed?

b. The third sentence states that "*during the Design Study and\or Focused Feasibility Study, areas designated as requiring remediation (e.g. capped areas) can be removed from the evaluation with further risk evaluation conducted for the remaining uncapped areas*." The re-evaluation of risks during the Focused Feasibility Study is not explained; it is unclear why remaining uncapped areas would require additional risk assessment if the areas that pose unacceptable risk are going to be capped.

2. **SLHHRE, Item 1 Site Areas, page 2**: There are three areas to be addressed in the risk assessment, including the Bluff Area, FPSA and Upland Portion of the Southeast Area (UPSEA). However, Figure 1 does not clearly depict the boundaries of these areas.

3. **SLHHRE, Item 1 Site Areas 1a. Bluff Area, Page 2**: It is unclear what the current use is at this area. This section states that the land use is expected to remain as is with no future development for the property owned by CBS and ExxonMobil, and that the future land use for the property formerly owned by ZCA is unknown. To provide the basis for receptor selection in the exposure assessment for this area, we suggest that the current uses at the Bluff Area be clarified.

4. **SLHHRE, Item 1 Site Areas, 1b. FPSA and 1c. UPSEA, Page 2**: These sections do not suggest that redevelopment will be significant at either area. The FPSA land use is expected to be limited to industrial/commercial use or undeveloped property and the UPSEA is expected to remain as is with no redevelopment. This is not consistent with the second paragraph on page 5, which states that it is anticipated that "significant areas of the FPSA/UPSEA" will be remediated and/or "redeveloped" for human health protection. To ensure risks for reasonable future uses are appropriately addressed, we suggest that the risk assessment be more clear on the future land use and the basis of selecting receptors for quantitative analysis.

5. **SLHHRE, Item 2 Receptors to be Considered, 2a. On-Site Industrial/Commercial Worker, Page 2**: It would be helpful to explain why a three-foot depth is deemed appropriate for this receptor. If the Site is redeveloped, it is likely that soils at depths beyond three feet would be brought to the surface, thereby making deeper soils available for future worker exposure once the Site is redeveloped.

6. **SLHHRE, Item 2 Receptors to be Considered, 2b. On-Site Construction Worker, Page 3**: This section states that exposure to this receptor may be different due to the physical location of the area and site-imposed worker restrictions. To promote clarity in the underlying assumptions associated with risks to this receptor at the different areas, we

suggest that the approach be revised to clearly explain why different exposure factors may be used for this receptor.

7. **SLHHRE, Item 3 Target Analytes, page 3**: Contaminants of potential concern (COPCs) will be selected by comparing sample results to the lower of Regional Screening Levels (RSLs) or Illinois Tiered Approach to Corrective Action (TACO) numbers based on industrial/commercial worker exposure and based on a noncancer HI of 1.0. There is no discussion on what cancer risk-based level the RSLs or TACO values will be based. Further, for areas where multiple chemicals have been detected, it is unclear why the RSL is not adjusted to $1/10^{th}$ of the RSL for noncancer effects to account for cumulative exposure. To ensure that chemicals are not overlooked as COPCs, an RSL based on an HI of 0.1 and a risk of 1×10^{-6} is recommended.

8. **SLHHRE, Item 5 Exposure Assessment, page 4**: It is unclear why a future industrial/ commercial worker exposure to soil is limited to three feet when site redevelopment could bring soils at greater depths to the surface. We suggest that the basis for the depth intervals for future exposures to this receptor be clarified.

9. **SLERA, Page 4**: The first paragraph states that a SLERA will be conducted based on existing data available for the Bluff Area, FPSA and UPSEA, but on page 5, item 1, it is stated that the spatial coverage of soil samples in the Bluff Area is limited and additional soil samples will be collected as part of SLERA. It would be helpful to clarify this apparent discrepancy in the approach.

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